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**A NEW SPECIES OF *HINNITES* (BIVALVIA: PECTINIDAE)
FROM ANGOLA (***)**

KEY WORDS: Bivalvia, *Hinnites* n. sp., Angola, Tropical West Africa.

Summary

A new *Hinnites*, *H. spectabilis* n. sp. from the southern part of the coast of Angola (Prov. Benguela and Moçâmedes) is described and compared with the 6 known living species of this genus. It is spectacular because of its size (up to 120 mm) and its vivid orange to deep violet colour. The species is characteristic for the small transition zone between the Tropical West African Province and the temperate Namibian (Namaqua) region, with clear, cold and nutritive water, where it lives on hard substrate in the infralittoral zone. - Besides this, a list of all known localities of the Tropical West African *H. absconditus* FISCHER in LOCARD is given.

Résumé

Un nouvel *Hinnites*, *H. spectabilis* n. sp. de la région méridionale de la côte d'Angola (Prov. Benguela et Moçâmedes) est décrite et comparée avec les 6 espèces vivantes connues de ce genre. Cette espèce est remarquable par sa taille (plus de 120 mm) et par sa couleur qui va de l'orange vif jusqu'au violet foncé. L'espèce est caractéristique de la petite zone de transition entre la Province Tropicale Ouest Africaine et la région tempérée de Namibie (Namaqua), avec des eaux claires, froides et riches en substances nutritives, où elle vit sur le substrat dur de la zone infralittorale. De plus nous donnons une liste de toutes les localités connues de l'espèce tropicale ouest africaine *H. absconditus* FISCHER in LOCARD.

Riassunto

Viene descritta *Hinnites spectabilis* n. sp. proveniente dalle coste meridionali dell'Angola (Prov. Benguela e Moçâmedes), comparandola con le 6 specie viventi note per questo genere. Questa nuova specie è notevole per le dimensioni (più di 120 mm) e per la colorazione che varia dall'arancione brillante al violetto scuro. Essa vive sui substrati rigidi dei piani infralittorali, nella ristretta zona di transizione fra la provincia tropicale west-africana e quella temperata della Namibia (Namaqua), caratterizzata da acque limpide, fresche e ricche di sostanze nutritive. Viene inoltre presentato un elenco di tutte le località note ove è stata ritrovata la specie tropicali west-africana *H. absconditus* FISCHER in LOCARD.

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There are 6 living species of the genus *Hinnites* DEFRANCE, 1821 presently known: *H. distorta* (DA COSTA, 1778) (NE-Atlantic: Norway to Morocco and Acores), *H. absconditus* P. FISCHER in LOCARD, 1898 (West Africa from Cape Verde Islands to Angola), *H. adamsi* (DALL, 1886) (St. Vincent, Lesser Antiles; deep water), *H. multirugosus* (GALE, 1928) (Aleutes to Lower California), *H. corallinus* SOWERBY, 1842 (East Africa and Bonin Islands, Japan) and *H. pasca* (DALL, 1908) (Easter Island). Recent extensive collecting along the coast of Angola yielded another species, which is quite different from the previously known species and which is described here as new:

Hinnites spectabilis n. sp.

Material examined

Holotype MNHN Paris, 120 x 105 mm, Baia de Santa Maria, Prov. Benguela, Angola, on rocks, 5 m. Paratypes: MNHN Paris, 92 x 92 mm (a lower valve), Moçâmedes, Angola, on underwater structure of a shipyard; MNHN Paris, 60 x 46 mm, Praia Amelia, Moçâmedes, Angola, on the inside of an old *Patella* shell, spring tide low water, 12.1981; MNHN Paris, 115 x 115 mm, 98 x 96 mm, 92 x 75 mm, 70 x 67 mm, 69 x 64 mm, all from Praia Amelia, Moçâmedes, Angola, 9. 1984; MNHN Paris, 86,4 x 90,5 mm, (an upper valve), Moçâmedes, Angola, Quaternary deposits; Museum de Mineralogia e Geologia, Universidade de Loanda, 84 x 82 mm (an upper valve), Moçâmedes, Angola, on underwater structure of a shipyard, 12.1981.

Description

Shell large, up to 120 mm, strong and moderately heavy, irregularly shaped according to the substrate, but generally more or less circular and, if only with small area attached, of similar height and width. Young regular "*Chlamys*" stage of the valves ca. 16-25 mm high and broad, with 20-30 very weak and smooth irregular radial ribs, and 1-4 riblets or threads in each interspace, part of these riblets becoming additional « regular » ribs in the later irregular growth stage (see below). Towards the umbones sculpture becoming obsolete. In adult specimens outside of upper (left) valve generally with numerous coarse, irregular, more or less wavy ribs (in holotype ca. 50 near the ventral margin) and irregular concentric growth lines. Radial ribs normally unequal in size, one in every 4-6 being more developed (pl. 2, fig. 1), some of the intercalated

smaller ribs gradually catching up in size towards the ventral margin in the later growth stage (pl. 1, fig. 1). Scales on the ribs of the irregular growth stage reaching 1,5 mm. Surface of lower (right) attached valve depending on the contact with the substrate: with irregular concentric lamellae when attached to or overlying the substrate, with radial ribs like the upper valve on the free growing parts. Ears more or less distorted, byssus gap very shallow and in fully grown specimens hardly visible and without function. Interior with large adductor scar within a comparatively small area surrounded by the pallial line. Hinge strong, hinge line straight or irregular, depending on the form of the substrate. Right (lower) valve slightly larger than left valve, especially in fully attached specimens.

Exterior colour of valves bright orange to deep violet or brick red. Interior yellowish, whitish with reddish stain of adductor scar or with a deep violet sector, or nearly entirely deep violet. Inner margin with an approximately 5-10 mm broad orange to brick red, reddish brown or purple zone; in the holotype this zone is seen clearly on the lower valve only, with an additional narrow deep violet fringe of ca. 3 mm directly along the ventral margin of the valve, in the upper valve the reddish zone is nearly entirely obscured by the violet colour of the interior, leaving visible only the narrow deep violet fringe along the ventral margin. Dark violet stain also along the hinge line. - Unattached part of the outer surface of adult specimens heavily incrustated with barnacles, polychaete tubes, oysters or smaller specimens of *H. spectabilis*, when the specimens are growing on exposed parts of the substrate.

Locus typicus

Baia de Santa Maria, Benguela, Angola.

Distribution

recent: hitherto only known from the short coast strip between Baia de Santa Maria and Moçâmedes in Southern Angola; fossil: Quaternary deposits near Moçâmedes Airport, altitude 50 m. Attributed to « Tyrrenien ».

Habitat

Infralittoral, from extreme low tide to a depth about 10 m, attached to hard substrate either exposed to light, or in crevices or under rocks, in moderately calm and very clear water. At the type locality and in Praia Amelia, specimens are abundant, but most are attached by the entire lower valve and cannot be detached easily or not at all.

Plate I

1. *Hinnites spectabilis* n. sp., holotype MNHN, interior of both valves, Santa Maria Bay, Benguela, Angola, on rock, 5 m.
2. *Hinnites spectabilis* n. sp., holotype MNHN, exterior of lower valve.
3. *Hinnites spectabilis* n. sp., paratype MNHN, 69 x 64 mm, interior of both valves, Praia Amelia, Moçâmedes, Angola, fully attached on rock, 1-2 m.
4. *Hinnites spectabilis* n. sp., same specimen as fig. 3, in situ.

Plate II

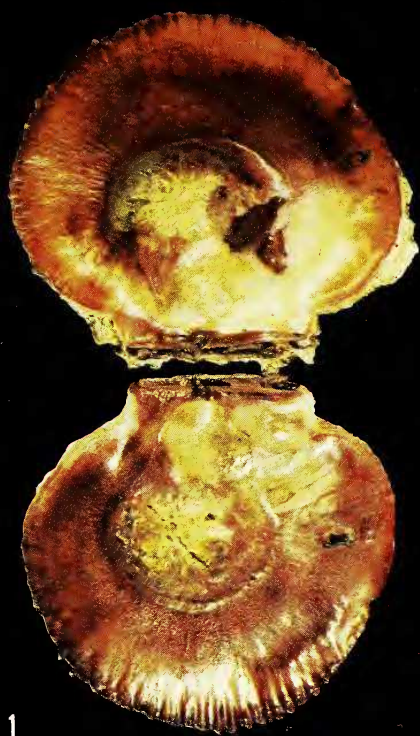
1. *Hinnites spectabilis* n. sp., holotype MNHN, upper valve. Santa Maria Bay, Benguela, Angola, on rock, 5 m.
2. *Hinnites spectabilis* n. sp., paratype MNHN, lower valve, 92 x 92 mm. Moçâmedes, Angola, on underwater structure of shipyard.
Note the irregular concentric lamellae of this specimen, which was only overlying the substrate and had its support on barnacles. The small specimen was overgrown by the large one.
3. *Hinnites spectabilis* n. sp., paratype MNHN, lower valve attached to old *Patella* shell, 60 x 46 mm. Praia Amelia, Moçâmedes, Angola.
All x 0,9

Plate III

1. *Hinnites spectabilis* n. sp., paratype MNHN, same as pl. 1, fig. 3, complete specimen. Note the larger lower valve and the large « *Cblamys* » stage.
2. *Hinnites spectabilis* n. sp., paratype Museu de Mineralogie e Geologia Luanda, 84 x 82 mm, upper valve. Moçâmedes, Angola, on underwater structure of shipyard. This specimen with creme interior, reddish muscle impression and reddish brown margin.
3. *Hinnites multirugosus* (GALE), specimen MNHN, upper valve. Mission Bay, California.
All x 0,9

Plate IV

- 1a-b. *Hinnites absconditus* P. FISCHER in LOCARD, syntype MNHN figured in LOCARD (1898), pl. 18, fig. 9, 10. São Tiago, Cape Verde Islands, 150 m. x 1,8.
2. *Hinnites absconditus* P. FISCHER in LOCARD, syntype MNHN figured in LOCARD (1898), pl. 18, fig. 11. x 1,8.
3. *Hinnites absconditus* P. FISCHER in LOCARD, specimen MNHN, upper valve, Ilha de Luanda, Angola, 100 m, trawled. x 0,9.
- 4a-b. *Hinnites absconditus* P. FISCHER in LOCARD, specimen MNHN, Gabon, 3° 25' S/ 9° 56' E, 100 m, muddy sand with corals, trawled « Thierry », GTS x 0,9.



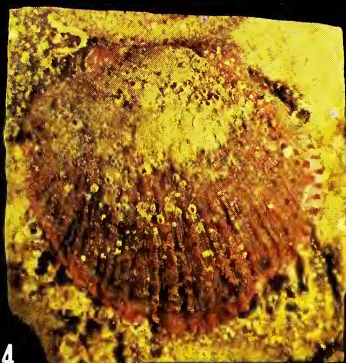
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3



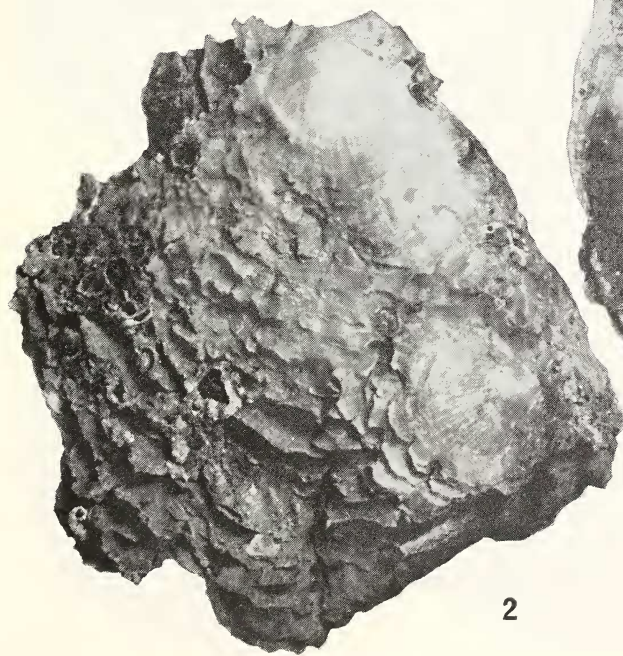
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4



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2

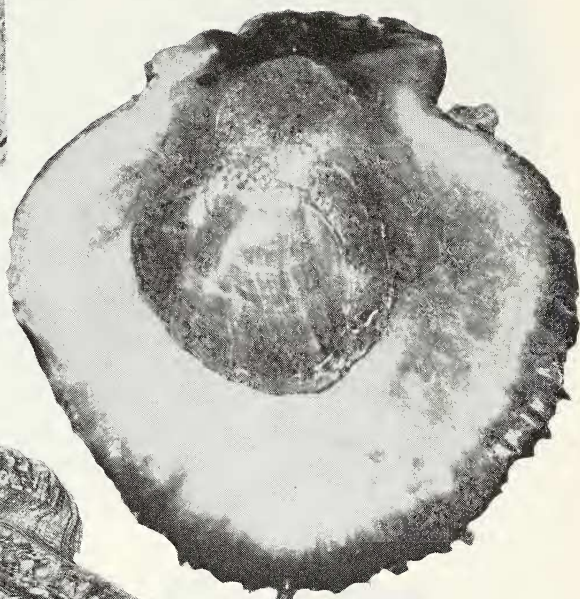


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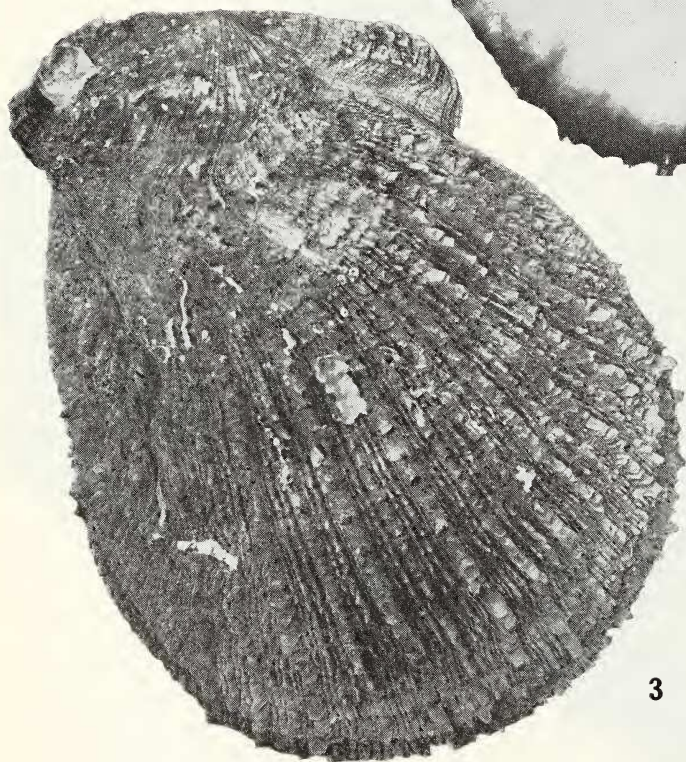
Plate II



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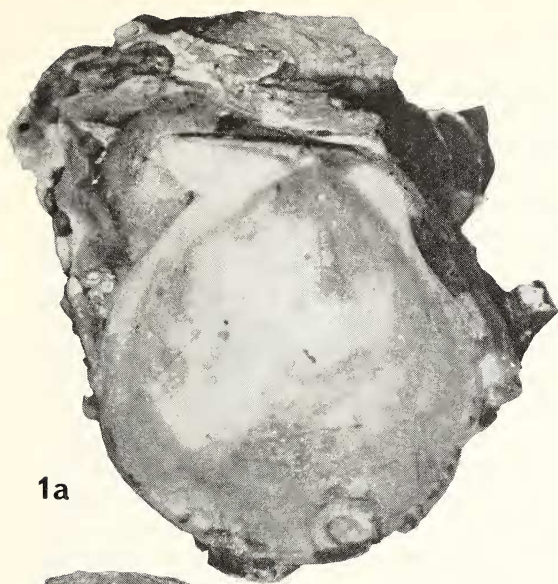


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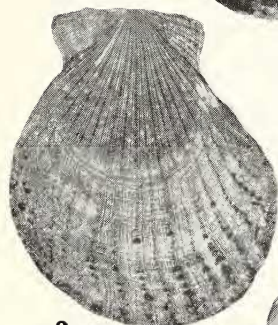
Plate III



1a



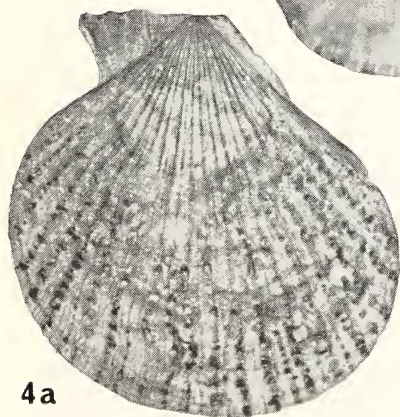
1b



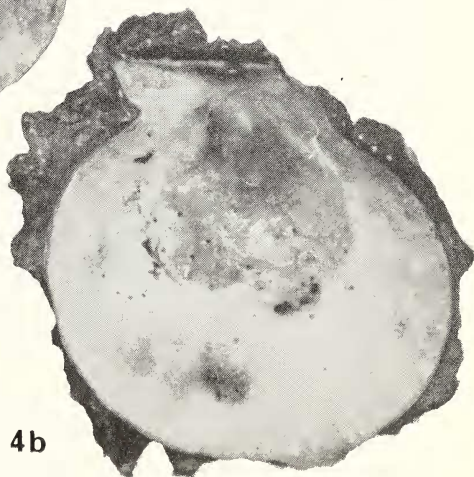
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2



4a



4b

Plate IV

Discussion

Hinnites spectabilis can best be compared with *H. multirugosus* (GALE) from the West coast of North America, which attains an equal size or grows even larger.

The sculpture of *H. multirugosus* is somewhat different, it consists of strongly scaled ribs, every 3th to 5th rib being markedly stronger throughout the whole surface, whereas in *H. spectabilis* the ribs are coarser and become equal-sized towards the ventral part of fully adult specimens. The valves of *H. multirugosus* generally are higher than wide (see GRAU, 1959), whitish inside, with deep purple stain at the hinge area, in *H. spectabilis* the valves are broader and have the characteristic colours.

The rare indopacific *H. corallinus* SOWERBY, the third species of that size, is known mostly by 1 adult and 2 juvenile specimens figured in REEVE (1853: *Hinnites*, pl. 1 fig. 1-2). The adult specimen (fig. 2) seems to be quite heavy, the illustration shows it brownish red with white interior, a reddish zone along the interior margin and irregular ribs with smaller ribs between them. The 2 juvenile "*Chlamys*" stage specimens REEVE (fig. 1, 1b) are larger than in *H. spectabilis* and have a vivid zigzag pattern, whereas in the angolan species the "*Chlamys*" stage is more or less unicoloured and lighter or slightly darker than the following irregular stage. - The other West African *Hinnites*, *H. absconditus* P. FISCHER in LOCARD (pl. 3, fig. 1-4) is smaller, with maximum size 69 x 70 mm (ADAM, 1960: 3), and its upper valve has ca. 18-24 more delicate scaly radial ribs with 2-6 fine threads in each interspace; the lower (attached) valve has heavy concentric lamellae only, the radial ribs being more or less restricted to the regular "*Chlamys*" stage. In contrast to *H. spectabilis* the sculpture on the "*Chlamys*" stage of *H. absconditus* is visible throughout its whole surface in both valves. *H. absconditus* is light brownish rosy to brownish, with the interior of the upper valve always stained with rosy to reddish; the lower valve is whitish inside, sometimes with some light rosy areas. - *H. distortus* (DA COSTA) is still smaller and lighter coloured, with more numerous radial ribs. Often there is no abrupt boundary between the "*Chlamys*" stage and the irregular stage. The regular stage is considerably variable in size from specimen to specimen. - *H. adamsi* DALL and *H. pasca* (DALL) are known only from one resp. a few small specimens, which, judging from the figure in DALL (1886) and REHDER (1980) are quite different from our species.

The distribution areas of the 3 Eastern Atlantic species of *Hinnites* are not overlapping. Between the southernmost record of *H. distortus* (33° 24' N, material of the R/V/ "Vanneau") and the northernmost one of the Tropical West African *H. absconditus* (São